WHAT IS CLAIMED IS:

1. A method for illuminating a target point in a real scene, comprising the steps of:

capturing image data of a scene;

5   identifying image data associated with a target point in the scene; and

projecting a light beam at the target point in the real scene using the image data associated with the target point.

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2. The method of claim 1, wherein the step of projecting comprises the steps of:

converting image coordinates of the target point to light coordinates for directing the light beam; and

15   processing the light coordinates to direct the light beam to the target point in the real scene.

3. The method of claim 1, wherein an integrated optical device is used for performing the steps of image

20   capture and light projection.

4. The method of claim 1, wherein the step of projecting a light beam comprises projecting a laser beam.

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5.   The method of claim 1, wherein the step of
capturing image data is performed using an omni-
directional camera.

5   6.   The method of claim 1, wherein the step of
identifying image data associated with a target point in
the scene, comprises the steps of:
        displaying the scene; and
        selecting a target point in the scene using the
10   displayed scene.

        7.   A program storage device readable by a machine,
tangibly embodying a program of instructions executable
by the machine to perform method steps for illuminating a
15   target point in a real scene, the method steps
comprising:
        capturing image data of a scene;
        identifying image data associated with a target
point in the scene; and
20   projecting a light beam at the target point in the
real scene using the image data associated with the
target point.

        8.   The program storage device of claim 7, wherein
25   the instructions for projecting comprise instructions for
performing the steps of:

converting image coordinates of the target point to
light coordinates for directing the light beam; and

processing the light coordinates to direct the light
beam to the target point in the real scene.

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9.   The program storage device of claim 7, wherein
the instructions for identifying image data associated
with a target point in the scene comprise instructions
for performing the steps of:

10   displaying the scene; and

receiving as input, image coordinates of a user-
selected a target point in the displayed scene.

10.   A system for illuminating a target point in a
15   real scene, comprising:

an image capture device for capturing image data of
a scene;

an illumination device for projecting a beam of
light at a target point in the scene; and a

20   data processing device comprising computer readable
program code embodied therein for processing image data
associated with the target point and generating control
signals to control the illumination system.

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11. The system of claim 10, wherein the image capture device and the illumination device comprise common optical properties.

5   12. The system of claim 10, wherein the image capture device and the illumination device comprise an integrated device.

        13. The system of claim 10, wherein the
10 illumination device comprises a light-emitting plane.

        14. The system of claim 14, wherein the data processing device comprises computer readable program code embodied therein for activating a point source in
15 the light-emitting plane that corresponds to a projection of the target point on the light-emitting plane.

        15. The system of claim 10, wherein the illumination device comprises a laser beam device.
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        16. The system of claim 15, wherein the laser beam device comprises:
        a laser beam generator;
        a deflector for deflecting the laser beam emitted
25 from the laser beam generator;

a plurality of motors, operatively connected to the deflector, for positioning the deflector to deflect the laser beam to the target point.

17. The system of claim 16, wherein the data processing device comprises computer readable program code embodied therein for generating control signals to control the plurality of motors to position the deflector at an appropriate angle.

18. The system of claim 10, wherein the image capture device comprises an omni-directional camera.

19. The system of claim 10, further comprising a display device for displaying the scene, wherein selecting a point on the displayed scene identifies a target point.